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(54) Method of applying coatings

(57) A method of applying a coating to a surface consists of applying to the surface a base film of a urethane composition having a thickness of 1—2 mm, allowing the applied film partial cure, applying an inert mineral aggregate having a particle size of 1—4 mm to the coated surface by

sprinkling the aggregate densely over the surface, allowing the base coating to set, removing excess aggregate and then applying a thin coat of the base material to seal in the aggregate. The urethane composition may include pigments to impart colour and fillers to improve mechanical strength and may be applied by spray, brush or roller. The outer coating may be thinned with solvent.

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SPECIFICATION

Method of applying coatings

This invention relates to improvements in the application of coatings to surfaces.

- 5 It is known to coat surfaces with aggregate filled non-skid systems. The conventional method is to apply a "buffer coat" to a surface to be coated and to allow this coat to dry. An aggregate filled coating layer is then applied to the buffer coat and this is also allowed to dry. Finally, a sealer coat is applied over the aggregate filled coating layer. The purpose of the buffer coat is to prevent contact between the aggregate and the surface to be coated or substrate and it has generally been accepted that such a buffer coat is required. It has also generally been accepted that the sealer coat is required so that, with the conventional method, a minimum of three coats is required in addition to any priming coats which may be considered to be necessary or desirable. Clearly, this method is time-consuming and labour-intensive and involves a great deal of downtime.

- The present invention aims to provide a method of coating surfaces with aggregate filled coatings which is quicker and more efficient than the conventional method above described.

- According to the invention, there is provided a method of coating a surface with an aggregate filled coating in which a relatively thick film of urethane is applied to the surface, the applied film is allowed partial cure, aggregate is then sprinkled densely over the coated surface, the base coating is allowed to set, excess aggregate is removed and a thin coat of the base material is applied to seal in the aggregate.

- An aggregate filled coating applied in this manner can be applied far more quickly than by the conventional method above described and yet it possesses all of the advantages of the coatings applied by the slower conventional method.

- The aggregate will normally be an inert mineral aggregate. Basalt is preferred although aluminium oxide quartz may also be used. The aggregate size can be in the region 1—4 mm, depending on the surface profile required. The preferred size is 2.5 mm and the preferred application rate is 3—4 Kg/m².

- The urethane coating is preferably a room-temperature curing solvent-free elastomeric urethane composition and may be either (a) an amine modified polyol or (b) a polyol, being isocyanate cured in either case.

- The urethane composition may contain pigments and/or fillers to impart colour and improve mechanical strength.

- In a preferred method according to the invention, a relatively thick film of 1—2 mm thickness of urethane was applied to a prepared surface by spray, brush or roller. Spray application is normally confined to the faster curing system (a).

Partial curing of the applied film was then allowed to take place. At 20°C, this time is approximately 5 minutes for the faster curing

- 65 system (a) and 45 minutes for the slower curing system (b). The aggregate was then sprinkled densely over the coated surface which was allowed to set after which the excess aggregate was swept away.

- 70 A thin coat of the base urethane coating was then applied by spray, brush or roller to seal in the aggregate. This second coat was applied after approximately 4 hours with the faster curing system (a) and approximately 12 hours with the slower curing system (b). Where the second sealer coat is applied by brush or roller, this coat may be thinned with solvent to reduce coating thickness and maintain surface profile.

- The invention is not restricted to the above-described method but variations and modifications may be made without departing from the scope thereof.

CLAIMS

1. A method of coating a surface with an aggregate filled coating in which a relatively thick film of urethane is applied to the surface, the applied film is allowed partial cure, aggregate is then sprinkled densely over the coated surface, the base coating is allowed to set, excess aggregate is removed and a thin coat of the base material is applied to seal in the aggregate.

2. A method according to claim 1, wherein the aggregate consists of an inert mineral aggregate.

3. A method according to claim 2, wherein the aggregate consists of basalt.

4. A method according to claim 2, wherein the aggregate consists of aluminium oxide quartz.

5. A method according to any preceding claim, wherein the particle size of the aggregate is 1—4 mm.

6. A method according to claim 5, wherein the particle size of the aggregate is 2.5 mm.

7. A method according to any preceding claim, wherein the aggregate is applied at the rate of 3—4 kg/cm².

8. A method according to any preceding claim, wherein the urethane coating consists of a solvent-free elastomeric urethane composition.

9. A method according to claim 8, wherein the urethane composition consists of an isocyanate cured amine modified polyol.

10. A method according to claim 9, wherein the applied base film of urethane is allowed to cure for 5 minutes at 20°C before the aggregate is applied.

11. A method according to claim 10, wherein the thin outer coat of urethane is applied after approximately 4 hours and after the excess aggregate has been removed.

12. A method according to claim 8, wherein the urethane composition consists of an isocyanate cured polyol.

13. A method according to claim 12, wherein the applied base film of urethane is allowed to cure for 45 minutes at 20°C before the aggregate is applied.

14. A method according to claim 13, wherein the thin outer coat of urethane is applied after

approximately 12 hours and after the excess aggregate has been removed.

15. A method according to any one of claims 8 to 14, wherein the urethane composition contains
5 at least one pigment and/or at least one filler.

16. A method according to any preceding claim, wherein the thickness of said relatively thick film of urethane is 1—2 mm.

17. A method according to any preceding claim, wherein one or both coats of urethane is/are applied by spray, brush or roller.

18. A method according to any preceding claim, wherein the thin outer coat of urethane is thinned with a solvent.

15 19. A method of coating a surface as claimed in claim 1 and substantially as described herein.